Like airplane owners who argue passionately about the advantages of flying low-wing Pipers versus high-wing Cessnas, virtual aviators have long engaged in a simmering debate about the merits of the leading PC-based flight simulations: X-Plane and FSX.

As explained in Chapter 3, both X-Plane and FSX support the learning environment that you need in order to use simulation as a complement to flight training — especially when following the approach advocated in this book.

Determining which simulation to use depends mostly on such factors as the type of computer you prefer (essentially, Windows or Mac), how much you enjoy tweaking and customizing software, and your own perception of how well each simulation immerses you in the illusion of flight — and perhaps whether you prefer factory-built airplanes (FSX) or homebuilt (“experimental”) aircraft (X-Plane).

**CROSS-REFERENCE** For more information that may help you decide which simulation is best for you, see Chapters 6 and 7. You can quickly compare the key features of each simulation, and assess how each simulation looks on a typical computer display.
Essential Features

Both X-Plane and FSX offer the key features — essentially the software components — of a basic aviation training device (BATD) that support their effective use in flight training, including the following:

- Detailed display of cockpit instruments and essential controls (see Figures 5-1 and 5-2)
- Flight characteristics representative of the aircraft depicted in the simulation
- Enough airports, navigation aids, and related details to support accurate navigation and airport operations
- Scenery in sufficient detail to support basic visual navigation and operations around airports (see Figures 5-3 and 5-4)
- Realistic simulation of weather (wind, clouds, visibility, and so forth)
- Features for instructors to change ambient conditions, simulate failures, and review the details of a simulated flight

Figure 5-1: The Cessna 172 cockpit in X-Plane
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Figure 5-2: The Cessna 172 cockpit in FSX

Figure 5-3: A typical airport environment in X-Plane
Basic Decision Tree

The best choice of simulation for you largely depends on the following factors:

- The type of computer you prefer. If you run Windows, either simulation works well. Although FSX can function on newer Macs that can run Windows, that’s not an ideal configuration. If you’re a Mac fan, X-Plane is the simulation of choice. If you’re dedicated to Linux, X-Plane is also the default choice.

- Your ability to set up and tweak your computer (especially if you want to run X-Plane on Linux). Basic installation of either product works well under Windows or Mac OS. Configuring and customizing X-Plane, however,
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may require more knowledge of how your system works than is necessary for setting up FSX.

- Your “user-interface aesthetic.” The menus and dialog boxes in X-Plane are utilitarian and not as polished as their counterparts in FSX (see Figures 5-5 and 5-6). The X-Plane interface isn’t difficult to use, but if you prefer software with a friendly face, FSX may be the better choice.

- How much you like to customize and tinker with a simulation, especially with aircraft characteristics. For example, X-Plane includes Airfoil-Maker, a supplemental application that you can use to change the modeling of a wide range of aerodynamic factors. FSX offers a more limited range of “realism” settings in the core simulation. (If you’re an experienced programmer, you can use the free FSX Software Development Kit to adjust many details of FSX and to create add-on features.)

![Figure 5-5: The X-Plane Quick-Flight Setup dialog box](image-url)
More Details: X-Plane

As noted earlier, X-Plane is available for all popular PC-platforms, including:

- Windows (XP through Windows 7)
- Mac OS
- Linux

For details about required processor speed, system memory, graphics adapters, and so forth, see the latest system requirements at the X-Plane website (link available at this book’s website at www.wiley.com/go/flightsimulatortraining).

You can purchase X-Plane directly from the developer’s website and from some online retailers and stores. For the latest information about where to buy X-Plane, visit X-Plane.com and community websites (links available at this book’s website). X-Plane is updated frequently, and you can download revisions from the X-Plane website.
More Details: FSX

FSX runs only on Windows (XP SP2 through Windows 7). For details about required processor speed, system memory, graphics, and so forth, see the product website and the latest system requirements described in Microsoft Knowledge Base Article 925724 (links available at this book’s website).

The scenarios in this book require only FSX Standard Edition, but Deluxe Edition and FSX Acceleration (which includes the FSX SP1) are also supported. The best deal available as this book went to press is the Gold Edition of FSX, which includes both FSX Deluxe and FSX Expansion and the service pack. Because FSX was released in 2008, it’s often easiest to purchase the software from the online Microsoft store or an online retailer.

Add-Ons

If you plan to use X-Plane or FSX for entertainment as well as a training aid, other considerations may inform your decision.

For example, both simulations have spawned large communities of users around the world, and many add-ons (free and for purchase) are available for each product. FSX, because it is the last version in one of the longest-running titles in the history of PC software, has held the advantage in this arena, and developers continue to create a variety of add-ons for FSX. However, Microsoft’s decision to stop producing Flight Simulator in favor of Microsoft Flight has ceded momentum to X-Plane, at least temporarily.

If you want to use a specific aircraft or cockpit layout while flying the scenarios in this book, investigate what’s available for each simulation. Models of most common training and personal aircraft are available for both X-Plane and FSX, and you can find a wide range of aircraft instruments (including glass-cockpit displays) for each simulation. Some are available as free downloads or shareware. Others are offered as packaged products.

Note that the quality and sophistication of add-ons varies. To learn more about specific add-ons, see the links available at this book’s website and popular community forums for X-Plane and FSX, where you can often find reviews and comments from customers.
Cockpit Controls

As noted in Chapter 1, both X-Plane and FSX work with popular flight yokes, joysticks, rudder pedals, throttle quadrants, and similar accessories. In fact, manufacturers of those accessories often provide configuration files for X-Plane and FSX that you can download from their websites.

The main factors that affect the compatibility of devices like flight yokes are the operating system on your computer and the number of USB connectors your system offers; but most of the popular controls work with Windows versions ranging from Windows XP to Windows 7 and newer releases of Mac OS.

If your computer can run X-Plane or FSX, it will probably work with popular cockpit controls. As always, however, it’s a good idea to visit the manufacturer’s website to confirm the system requirements for each device you want to add to your home cockpit.

Realism

Partisans of X-Plane and FSX often base their preference on the realism of the flight models (the way the airplanes behave in the air). As noted in “Flight Dynamics” in Chapter 3, those debates are largely moot, at least as they pertain to the use of BATDs as complements to real-world flight training.

Disputes about how well the simulated aircraft fly are sometimes confused because vocal fans may have little (or no) experience at the controls of real aircraft. The characteristics of the flight yoke or joystick used as the primary control also strongly influence impressions about flying qualities. Reasonably priced devices made for the consumer market currently can’t replicate the precision and range of motion of real aircraft controls, and even high-end devices made for approved flight training devices (FTDs) often don’t provide the tactile feedback of their counterparts in an actual aircraft. Experienced pilots also develop a feel for flight based on kinesthesia, the (often unconscious) perception of motion and reaction to control inputs in a real airplane. Those cues are missing in a simulation planted firmly on the ground, and their absence can create subtle expectations that strongly influence the perception of how well a virtual airplane “flies.”

Some virtual pilots think X-Plane flies more smoothly than FSX. Others prefer the way FSX handles. In the end, the choice is up to you: high-wing or low-wing?
Help and Support

Both X-Plane and FSX include resources to help you learn about, use, and customize the simulations.

X-Plane provides a user-guide in PDF format (and as a wiki at the X-Plane website), a Help feature, plus forums on a range of subjects, including add-on aircraft and features.

FSX includes the Learning Center (on the Help menu). In effect, it’s a user guide on disk (see Figure 5-7). Additional help is available on the FSInsider website.

Figure 5-7: The FSX Learning Center

You can also find magazine articles (print and electronic editions), books, and myriad videos and blog items on the web that can help you get up to speed on and master specific features of X-Plane or FSX. You’ll find links to some of these resources at this book’s website.

**NOTE** Neither the author nor Wiley can provide support for X-Plane and Microsoft Flight Simulator, add-on aircraft and features, or joysticks and other accessories. If you have questions about these products, contact the developer or manufacturer. The web-based communities for X-Plane and FSX are also good places to find answers and get advice from experienced users.